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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/621,465	<b>Applicant(s)</b> FUNATO, HIROYOSHI	
	<b>Examiner</b> Audrey Y. Chang	<b>Art Unit</b> 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 30-44, 46, 48 and 49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-44, 46, 48 and 49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Remark*

- This Office Action is in response to applicant's amendment filed on July 12, 2005, which has been entered into the file.
- By this amendment, the applicant has amended claims 30, 43, and 48, has canceled claim 45 and has newly added claim 49.
- Claims 30-44, 46 and 48-49 remain pending in this application.
- The rejections to claims 30-42 and 48 under 35 USC 112, first paragraph, based on non-enabling rejections are withdrawn in response to applicant's amendment.

### *Response to Amendment*

1. **The amendments filed on December 28, 2004 and July 12, 2005** are objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the **previous amended claims 30**, the **previously added claim 48**, (in amendment filed on December 28, 2004) and the newly **amended claim 43** recite the feature "without etching said substrate" or "an unetched substrate" that is not specifically supported by the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 30-42, 43-44, 46 and 48 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

*The reasons for rejection based on newly added matters are set forth in the paragraphs above.*

**The applicant is respectfully reminded that the step of “etching the birefringent layer of (93)” DOES NOT provide the explicitly teachings of “NOT etching the substrate”. These are two separated things and cannot be relied upon as the base for the teachings of “without etching the substrate” or “unetched substrate”. The applicant is respectfully referred to MPEP 2173.05(I) for further discussions concerning the issue of “negative limitations”. The mere absence of a positive recitation is NOT basis for an exclusion.**

4. **Claims 43 and 44-46 are rejected under 35 U.S.C. 112, first paragraph**, as containing subject matter which was not described in the specification in such a way as to **enable** one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

*This rejection is repeated from the previous Office Action.*

The specification and claims also fail to teach how can a “*incident reflection beam*”, (with respect to claim 43), be generated. An incident beam has to be transmitted, that is to say transmits into the hologram, in order for the hologram to **diffract** the incident beam. If an incident beam is a “reflection beam” then this means the light beam is reflected off the *surface* of the hologram and NEVER be diffracted or even affected by the hologram. It is not clear how can an “*incident reflection beam*” ever be diffracted by the hologram. Furthermore, how can an incident beam ever being a reflection beam, since

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the propagation directions with respect to the hologram for an incident beam and for a reflection beam are completely opposite.

**Claims 44 and 46 inherit the rejection from their respective based claim.**

***Claim Objections***

**5. Claims 30-42 and 48 are objected to because of the following informalities:**

(1). **Claim 30 has been amended** to include the phrase “incident reflection beam from an optical disk” that is confusing and indefinite since it is not clear what is this optical disk and how does it structurally and logically related to the polarization hologram and the method for making the polarization hologram. Claims 31-42 inherit the rejection from their based claim.

(2). **Claim 48 has been amended** to include the phrase “the reflection beam” that is confusing and indefinite since it lacks antecedent basis from earlier part of the claim.

**Appropriate correction is required.**

***Claim Rejections - 35 USC § 103***

**6.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**7. Claims 30-32, and 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Takeda et al (PN. 5,739,952) in view of the patent issued to Nakamura et al (PN. 5,244,713) and Takeda et al (PN. 5,793,733).**

**Takeda** et al teaches a *polarization beam splitter* that is comprised of a *holographic grating pattern* (Figures 1-4) formed with *birefringence film* (2) laying on a *substrate* (1). The birefringence layer (2) has an anisotropic property such that the *refractive indices* ( $n_o$  and  $n_e$ ) of the layer for light propagates in the *ordinary* direction (S-polarization direction) and *extraordinary* direction (P-polarization direction) are different from each other. This difference in refractive indices will make the holographic grating imparting *different* phase value to the S-polarization and P-polarization components of an incident light which therefore will diffract the two components of light differently.

Takeda et al teaches that the holographic grating pattern of the polarization beam splitter is formed by first *depositing* a monomeric diacetylene film (i.e. an organic polymer film) on a *substrate* and then polymerized it to form a polymer of diacetylene, which is an *organic polymer material*. The polymer material is then *rubbed* in *one direction to form the birefringence layer*. Takeda et al further teaches that a *resist* for forming a grating is applied on top of the polydiacetylene film to *form the grating pattern* in the film, (please see columns 8-9). The grating pattern is holographic because Takeda et al teaches explicitly that the grating may also be formed by two-beam interference method, (please see column 9, lines 1-5).

This reference has met all the limitations of the claims with the exception that although it teaches that polymer film is *rubbed* in one direction but it does not teach explicitly that the polymer film is uni-directionally stretched and heated to form the birefringence film. However using uni-directional stretching and heating process to form birefringence film from an *organic polymer film* is rather well known in the art as demonstrated by the teachings of **Nakamura** et al wherein an *organic polymer film* is **heat treated and then uniaxially stretched, (i.e. uni-directionally stretched)** to make the film have *optimum* birefringence, (please see column 4, lines 6-26). Nakamura et al teaches that polymer materials that can be made birefringence by heat treatment and stretching method include *polycarbonates*, *polystyrene and polyamide resins*, (please see column 2, lines 53-69). It would then have been obvious to

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one skilled in the art to use the well-known heating and uniaxial stretching method and the well known *organic polymer* materials as an alternative materials and method to make the *birefringence* film that can be used as the birefringence layer for the holographic grating of Takeda et al for the benefit of using a manufacture method to obtain *optimum* birefringence of the film, and to cut manufacture cost by using conventionally accessible and known polymer materials.

Although these references do not teach explicitly that the organic polymer film is applied on a substrate and then removed from the substrate and do not teach, the birefringence film is reattached to the substrate via an *adhesive* layer however such processes have to be either inherently met by the disclosures of Takeda et al or disclosure of Nakamura et al in the step of forming the organic polymer film before the heating and stretching treatment steps and in the step of adhering the birefringence film to the substrate or obvious modifications to one skilled in the art since the organic polymer film has to be **first** formed on some substrate and the substrate cannot be included in the heating and stretching steps for it will interrupt such treatments for the film to make the birefringence film. Furthermore, whether to use an adhesive layer to attach the birefringence film layer to the substrate or not really provides no patentable distinction since the final result, namely having the birefringence film layer *attached* to the substrate, is achieved by the disclosure of Takeda et al. Also Takeda et al specifically teaches that equally good result will be achieved by either having an adhesive layer between of the birefringence layer and the substrate or not having one, (please see column 27, lines 10-15). Such modification therefore is considered as obvious matters of design choice to one skilled in the art for making the adhesion between the two by desired manner.

**With regard to the feature** concerning the periodic grating pattern formed by placing photo-resist and mask, this reference does not teach such explicitly. Takeda et al ('952) teaches that the periodic grating is formed by using two beams interference method but does not teach explicitly that it is formed by using photo-resist and mask. However using photo-resist layer with a mask to form periodic grating

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pattern is a standard method in the art as demonstrated by the teachings of **Takeda et al ('733)**, wherein a polarization grating is formed by placing a photo-mask (14) formed in a photo-resisting material and placing such photo-mask over the birefringence layer (12) and using UV irradiation to form the periodic grating pattern, (please see Figures (2a) to 2(c), column 5, lines 5-23). The photo-mask (14) has to be formed in a photo-resist material in order for it to stand the high photo energy of the UV beam. It is implicitly true that the substrate (11, figures 2(a) to 2(c)) *is not etched*. It would then have been obvious to one skilled in the art to apply the teachings of **Takeda et al ('733)** as an alternative means for forming the desired grating pattern in the birefringence layer for the benefit of perhaps providing the capability of mass producing such holograms by using a standard photo-mask.

**Claim 30 has been amended** to include the feature of receiving a reflection light beam from an optical disk. **Takeda et al ('952)** and **Takeda et al ('733)** both teach that the polarization hologram is utilized in an optical head or optical pickup device which implicitly mean the light incident on the polarization hologram can be reflected from an optical disk (please see Figures 9a) and 9 (b) of **Takeda et al ('952)**).

With regard to claim 31, in a different embodiment **Takeda et al** teaches that an isotropic layer (20, Figure 12) can be formed over the grating patterned birefringence film (2) to enclose the birefringence layer.

With regard to claim 32, **Nakamura et al** reference teaches that the suitable polymers that can be heat stretched to form birefringence film includes polycarbonate, polystyrene and polyamide film, (please column 2, lines 53-69). The modification would have been obvious to one skilled in the art since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended used as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With regard to claim 35, **Nakamura et al** teaches that the heat stretching process is done at a temperature between 190 to 230 °C. Although it does not teach explicitly that it is heated at 350 °C but



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such feature is considered to be obvious modification since at either temperature the same result namely heating the organic polymer film in the processes of forming it a birefringence film is achieved.

With regard to claims 37-39, these references teach many different examples of birefringence film with different refractive index in the ordinary and extraordinary direction, however they do not teach explicitly to have the particular values claimed in the claims. But such modification is considered to be obvious matters of design choices to one skilled in the art to make the birefringence film with desired refractive indices so that the polarization beam splitter with the holographic grating pattern will behave as desired.

With regard to claims 40 and 41, Takeda et al teaches that the optical path difference for the ordinary and extraordinary light paths for the grating patterned birefringence film with the grooves of the grating pattern formed with isotropic material are denoted by equations 26 and 28, i.e.

$$\text{OPD}(o) = (n_o - n_c) * d_2 * k, \quad \text{OPD}(e) = (n_e - n_c) * d_2 * k,$$

Wherein  $n_o$  and  $n_e$  are the refractive indices of the birefringence film for the ordinary and extraordinary direction and  $n_c$  is the refractive index of the isotropic layer and  $d_2$  is the grating height and  $k$  is  $\lambda/2\pi$ ,  $\lambda$  being the wavelength. Takeda et al teaches that in order for the ordinary light or the extraordinary light to be not diffracted by the grating the optical path length difference has to be an even multiple of  $\pi$ , i.e.  $2m\pi$ , and in order for them to be diffracted the optical path difference has to be an odd multiple of  $\pi$ , i.e.  $(2m+1)\pi$ . Takeda et al teaches that the beam splitter including the holographic grating is designed to totally diffract one component of the beam and leaves the other not diffracted, (please see column 7, lines 18-24). This then requires one of the optical path difference equals  $2m\pi$  and the other equals  $(2m+1)\pi$ . This then gives the following results:

$$\text{OPD}(o) = 2m\pi = (n_o - n_c) * d_2 * k, \text{ which gives } (n_o - n_c) d_2 = m \lambda, \text{ and}$$

$$\text{OPD}(e) = (2m+1)\pi = (n_e - n_c) * d_2 * k, \text{ which gives } (n_e - n_c) * d_2 = (2m+1) \lambda,$$

Or,

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$$\text{OPD(o)} = (2m+1)\pi = (n_o - n_c) * d2 * k, \text{ which gives } (n_o - n_c) d2 = (2m+1) \lambda, \text{ and}$$
$$\text{OPD (e)} = 2m\pi = (n_e - n_c) * d2 * k, \text{ which gives } (n_e - n_c) * d2 = m \lambda.$$

With regard to claim 42, these references do not teach explicitly to use spin coating for applying the organic polymer to the substrate, however such process is extremely well known in the art, such modification would have been obvious to one skilled in the art as an alternative means to apply the polymeric film on the substrate.

8. **Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Takeda et al ('925) and Nakamura et al and Takeda et al ('733) as applied to claim 30 above, and further in view of the patent issued to Yoshimi et al (PN.5,245,456) and Yamamoto et al (PN. 6,040,418).**

The polarization beam splitter comprises a holographic grating taught by **Takeda et al** in combined with the teachings of **Nakamura et al** as and **Takeda et al ('733)** described for claim 30 above have met all the limitations of the claims. These references however do not teach explicitly that the organic polymer material comprises polyimide and the polyimide film is obtained with the claimed acid and solvent solution. **Yoshimi et al** in the same field of endeavor teaches that polyimide resin shows positive birefringence which is then a suitable birefringence polymer material. **Yamamoto et al** in the same field of endeavor teaches that it is standard knowledge in the art to prepare polyimides using polyamide acid with solvent, (please see columns 1 and 2). It would then have been obvious to one skilled in the art to apply the teachings of **Yoshimi et al** and **Yamamoto et al** to prepare polyimide film as an alternative suitable polymer material for the birefringence film. Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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9. **Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al (PN. 5,739,952) in view of the patent issued to Nakamura et al (PN. 5,244,713).**

**Takeda** et al teaches a *polarization beam splitter* that is comprised of a *holographic grating pattern* (Figures 1-3) formed with *birefringence film* (2) laying on a *substrate* (1). The birefringence layer (2) has an anisotropic property such that the *refractive indices* ( $n_o$  and  $n_e$ ) of the layer for light propagates in the *ordinary* direction (S-polarization direction) and *extraordinary* direction (P-polarization direction) are different from each other. This difference in refractive indices will make the holographic grating imparting *different* phase value to the S-polarization and P-polarization components of an incident light which therefore will diffract the two components of light differently.

This reference has met all the limitations of the claims with the exception that although it teaches that the birefringence film comprises an organic polymer film is *rubbed* in one direction but it does not teach *explicitly* that it is uni-directionally stretched birefringence film. However using uni-directional stretching and heating process to form birefringence film from an *organic polymer* film is rather well known in the art as demonstrated by the teachings of **Nakamura** et al wherein an *organic polymer film* is **heat treated and then uniaxially stretched, (i.e. uni-directionally stretched)** to make the film have *optimum* birefringence, (please see column 4, lines 6-26). It would then have been obvious to one skilled in the art to use the well-known heating and uniaxial stretching method and the well known *organic polymer* materials as alternative materials and method to make the birefringence film to be used as the birefringence layer for the holographic grating of Takeda et al for the benefit of using a manufacture method to obtain *optimum* birefringence of the film, and to cut manufacture cost by using a conventionally accessible and known polymer materials.

**With regard to** the feature having the depth of the grating is essentially equals to a thickness of the birefringence layer. This is corresponding to the situation of making the thickness of  $d_3$  being zero as in equations (22 and 23, to Figure 4) of Takeda et al ('952). Such modification would certainly have been

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obvious to one skilled in the art for the benefit of making the polarization grating with less material and therefore less cost. Furthermore, it has been held when the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

**Claim 43 has been amended** to include the feature of “unetched substrate”. Takeda et al teaches explicitly that the substrate is unetched as shown in Figures 4, 9(a) and 9(b)).

With regard to claim 44, in a different embodiment Takeda et al teaches that an isotropic layer (20, Figure 12) can be formed over the grating patterned birefringence film (2) to enclose the birefringence layer.

**10. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Takeda et al and Nakamura et al as applied to claim 43 above, and further in view of the patent issue to Iwatsuka et al (PN. 5,245,471).**

The polarization beam splitter including the holographic grating taught by **Takeda et al** in combination with the teachings of **Nakamura et al** as described for claim 43 above have met all the limitations of the claims. These references however do not teach to have the features of having a second substrate formed with an adhesive layer as the isotropic layer. **Iwatsuka et al** in the same field of endeavor teaches a polarizer including grating pattern formed in birefringence layer wherein a second substrate (19, Figure 6E) is formed on top of an adhesive layer (18) serves as the isotropic layer that fills the grooves of the grating patterned birefringence layer (4). It would then have been obvious to one skilled in the art to apply the teachings of Iwatsuka et al to modify the design of the beam splitter of Takeda et al accordingly for the benefit of providing the polarization beam splitter with easy handling.

**11. Claim 48 and newly added claim 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Iwatsuka et al (PN. 5,245,471) in view of the patent issued to Nakamura et al .**

**Claim 48 has been amended that necessitates the new ground of rejection.**

Iwatsuka et al teaches a method for forming a polarization hologram that is comprised of the step of providing a *substrate* (1) and forming a *birefringence layer* (2) over the substrate. The method further comprises the step of forming a *photo-resist mask* (3) over the birefringence layer and forming a *periodic grating pattern* on the birefringence film without etching the substrate. The method then comprises the step of *removing* the photo-mask and forming an *isotropic layer* (4, 9 , 11 or 18) over the patterned birefringence layer, (please see Figures 1, 2(A) to 2(E) and 6(A) to 6(E)).

This reference has met all the limitations of the claim with the exception that it does not teach explicitly that the birefringence layer is an uni-directional stretched organic polymer layer. However birefringence layer formed by uniaxially stretching organic polymer layer is very well known in the art as demonstrated by the teachings of Nakamura et al wherein an *organic polymer film* is *heat treated and then uniaxially stretched, (i.e. uni-directionally stretched)* to make the film have *optimum* birefringence, (please see column 4, lines 6-26). It would then have been obvious to one skilled in the art to apply the teachings of Nakamura et al to use a birefringence layer that is comprised of an uniaxially stretched polymer layer for the benefit of allowing different materials being used to form the polarization grating and at same time using a birefringence layer that is made to have *optimized* birefringence which is essential for the function of the polarization hologram.

**Claim 48 has been amended** to include the formula for designing the polarization hologram. Iwatsuka et al teaches such formula explicitly. Iwatsuka et al teaches that if the isotropic layer (11) has refractive index of (n2) and the birefringent layer (10) has refractive index for one polarization, which

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may be p-polarization, is (n+) and for the other polarization, which may be s-polarization, is (n-) and the thickness of the grating pattern of the polarization hologram is "d" then the following equations holds:

$[(n+) - (n2)] * d = N1 * L$  and  $[(n-) - (n2)] * d = N2 * L$ , (L being the wavelength), (pleas see columns 4-5).

With regard to claim 49, the periodic grating pattern has different refractive indices for two orthogonal polarization direction, in the birefringent region (2).

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**13. Claims 43-44 and 46 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,618,344.**

Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claimed a polarization hologram with grating pattern formed in a birefringence layer such that the birefringence layer is a stretched organic polymer film. The feature concerning the birefringence layer being *uni-directionally stretched* as recited in claim 43 of instant application does not differentiate the instant application from the cited patent since birefringent layer comprises uni-directional stretched or uniaxially stretched polymer film is very well known and standard in the art. And it has

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been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

### *Response to Arguments*

14. Applicant's arguments filed on July 12, 2005 have been fully considered but they are not persuasive. The newly amended features and newly added claim have been fully considered and they are rejected for the reasons stated above.

In response to applicant's argument concerning the cited Takeda ('952) reference does not teach that the feature concerning "without etching a substrate" the examiner respectfully disagrees since firstly the cited reference does not teach about "etching the substrate" explicitly for forming the polarization hologram as shown in Figures 4-8. Secondly, as shown in Figures 4-8, 9(a) and 9(b) the polarization hologram can be formed by simply having the patterned birefringent layer (2) *on the flat surface* of the substrate wherein the flat surface of the substrate suggests the substrate is not etched.

In response to applicant's arguments concerning the cited Takeda et al ('952) reference teaches thin birefringent film is formed by rubbing in *one direction* while the cited Nakamura, *in contrast*, teaches a *uniaxially stretched* film which "one skilled in the art would not look to Nakamura" for modification the examiner respectfully disagrees for the reasons stated below. *One direction rubbing* taught in cited Takeda et al ('952) reference will result in *one direction stretching* of the film and the *uniaxially stretched* film of the Nakamura reference is a ONE DIRECTIONALLY stretched film. One skilled in the art certainly will see the connection in these two references. Uniaxial stretching is not contrast to one directional rubbing.

In response to applicant's arguments concerning the double patenting rejection, the applicant is respectfully reminded that the phrase "optical pickup apparatus" recited in the claims of the cited patent is only in the preamble and no structure concerning the "optical pickup apparatus" are present in the claims

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and the optical pickup apparatus does not the polarization hologram which therefore provide no patentable distinction. Also a uni-directionally stretched film is not distinct from and is included in the scopes of the "stretched film" recited in the cited patent. The double rejections of the claims with respect to the cited patent (PN. 6,618,344) still hold.

### *Conclusion*

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

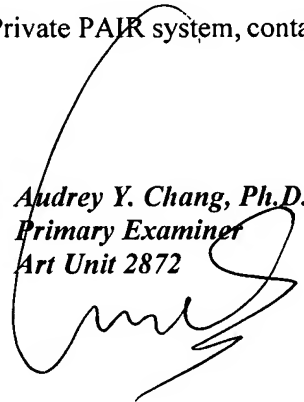
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Audrey Y. Chang, Ph.D.*  
*Primary Examiner*  
*Art Unit 2872*



A. Chang, Ph.D.